Protection of Water Quality and Scenic Values from the effects of Logging at Gun Lake

Complaint Investigation 970127

FPB/IRC/33

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Background

Gun Lake is a 530-hectare lake on the eastern side of the Coast Mountains, approximately 100 kilometres west of Lillooet. Proposed logging close to Gun Lake raised concerns with the Gun Lake Ratepayer's Association (the complainant) about impacts on the visual landscape and water quality.

In 1993, Ainsworth Lumber Company (the licensee) proposed cutting permit 143 for a cutblock on the northwest face of Mount Zola, at the southwest end of the lake. A unique feature of the area is a layer of volcanic ash soil. The thin ash layer is the reason for much of the concern about the potential impacts from harvesting in the area. The complainant was concerned that the ash would be easily eroded following harvesting and that this would result in visible scars on the landscape and the transportation of sediment into Gun Lake, the water source for the residents.

*A **cutblock** is a specific area of land identified on a forest development plan, or in a licence to cut, road permit, or Christmas tree permit, within which timber is to be or has been harvested.*

For several years, the complainant expressed concerns to the Ministry of Forests and the licensee. The complainant and the licensee communicated regularly and held several meetings about the proposal. Several assessments were conducted by the licensee. In 1994, the complainant had applied to the Ministry of Environment, Lands and Parks to have Gun Lake designated as a community watershed. A decision on the request was postponed until the *Community Watershed Guidebook* was completed. In 1996, the complainant reiterated the request to the regional Ministry of Environment, Lands and Parks office.

In 1996, before the Ministry of Environment, Lands and Parks decided on community watershed status, the district manager committed to treat the area as if it were a community watershed, in an effort to alleviate some of the complainant's concerns. The complainant was not satisfied because it felt that the district manager's commitment could be withdrawn at any time. The commitment was made in writing to the complainant and licensee but was not mentioned in the forest development plan. Although he did not specify this at the time, the district manager intended the commitment to apply only to development of cutting permit 143; it has not been extended to planning in the rest of the watershed.

*A **forest development plan** is an operational plan that provides the public and government agencies with information about the location and scheduling of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect forest resources (including water, fisheries, and other forest resources. Site specific plans are required to be consistent with the forest development plan.*

In 1997, a Ministry of Forests regional specialist studied the volcanic soils. The study focused on engineering and slope stability issues, particularly relating to road construction. It was not a response to the complainant's concerns and was not intended to deal with cutting permit 143. The study did not look specifically at erosion or water quality concerns. The study report had not been completed as of May 2000.

In May 1997, the complainant was notified that the Ministry of Environment, Lands and Parks would not designate the area as a community watershed. In July 1997, the cutblock for cutting permit 143 was approved in the forest development plan. In September 1997, the complainant filed the complaint with the Board citing several concerns related to the proposed cutblock:

*A **cutting permit** is a legal document that authorizes the holder to harvest trees under a licence issued under the Forest Act.*

- a lack of information about the impact of the development on local volcanic soils;
- the accuracy of terrain stability and watershed assessments;
- the size of the proposed block;
- the location of reference points used in a visual impact assessment of the block; and
- the failure to designate the area as a community watershed.

The block was harvested in 1998. As of May 2000, the complainant had not identified any significant impacts on water quality or visual landscape resulting from the cutblock.

The investigation focused on three issues:

1. Did the approval process for the silviculture prescription comply with the Code and was the process fair and reasonable?

2. Did the process for locating the visual impact assessment viewpoints comply with Code requirements and was it fair and reasonable?

3. Did the process for considering the request for community watershed status comply with the Code and was it fair and reasonable?

Investigation Findings

1. Approval of the Silviculture Prescription

The complainant wanted the district manager to delay development of the silviculture prescription for cutting permit 143 until the Ministry of Forests completed its study on volcanic soils.

According to section 41 of the Act, a district manager must be satisfied that a silviculture prescription will adequately manage and conserve forest resources before he approves the plan. Knowledge of the volcanic soils was relevant in deciding whether or not to approve the silviculture prescription for cutting permit 143. However, the Code does not oblige a district manager to stop or delay the preparation of operational plans until further information is available. The district manager can require that the licensee conduct assessments for the silviculture prescription, and he did so in this case.

Finding #1

The Code does not require that the development of an operational plan be stopped until further information is available.

The silviculture prescription was approved in December 1997, following a 60-day public review and comment period. The review was not a standard Code requirement but was required by the district manager.

> ***Operational plans*** *detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include forest development plans, logging plans, range-use plans, silviculture prescriptions and stand management prescriptions.*

The complainant was concerned that harvesting on the volcanic soils would lead to erosion and degradation of water quality. The forest district admitted that little was known about the soils and that research was needed.

> *A* ***silviculture prescription*** *is an operational plan that prescribes the method for harvesting the existing forest stand, and a series of silviculture treatments that will be carried out to establish a free growing crop of trees in a manner that accommodates other resource values as identified.*

The information available to the district manager at the time that he approved the silviculture prescription included two terrain stability assessments and three watershed assessments. The complainant asserted that the terrain stability assessments and the watershed assessments were unreliable because of errors in the precipitation and run-off estimates.

The Board examined the assessments and found that the methodology used to determine the precipitation and run-off estimates was appropriate. In any event, precipitation and run-off estimates do not affect the assessments to any significant degree. They were adequate for the purposes of assessing the watershed and terrain stability.

Finding #2

The precipitation and run-off estimates used in the terrain stability and watershed assessments were adequate.

Terrain Stability Assessments

An assessment of terrain stability and erosion potential was done in 1996. A more detailed terrain stability and soil erosion assessment was done in 1997. The soil assessment was separate from the Ministry of Forests study on volcanic soils. A Ministry of Forests geotechnical engineer evaluated the terrain stability and soil erosion assessment before the district manager accepted the results. He also commented on the volcanic soils study. The engineer agreed with the assessment findings that there was a low risk of landslides and surface soil erosion in cutting permit 143. Proper road construction and maintenance could control any erosion that did occur. He told the district manager that the volcanic soils study would not provide information

relevant to approval of the silviculture prescription. He also stated that the ash layer was too shallow to create a stability concern. The Board accepts the engineer's opinion on those matters.

The district manager accepted the 1997 assessment report on the condition that the licensee consider the potential for surface soil erosion in the engineering design of the road. The district manager also required that the licensee develop a detailed monitoring plan to ensure no adverse affects to water quality. The licensee identified this requirement in the silviculture prescription.

Finding #3

The terrain stability assessments and professional opinions indicated that the harvesting of cutting permit 143 would not create erosion problems.

Watershed Assessments

The district manager required that the licensee conduct a watershed assessment even though it was not required by the Code. A watershed assessment considers each sub-basin of a watershed, assessing existing water-related problems and identifying hydrological implications of proposed harvesting.

The results of the first watershed assessment indicated that a more detailed assessment was required. The second assessment indicated a high surface-erosion hazard in the sub-basin that included cutting permit 143, and identified a potential concern about the amount of area that was already clearcut or in a similar condition within this sub-basin. Clearcutting an area can change the pattern of snowmelt, resulting in increased surface water flows from the clearcut area. This could cause an increase in erosion. The second assessment report recommended a further assessment of sediment sources. This was done and the report stated that it was unlikely that sediment from the proposed cutblock would reach Gun Lake.The report also stated that any resulting sediment could be contained with proper road construction and harvest methods, supplemented by readily available erosion control mechanisms. Riparian management techniques[1] and wildlife tree retention proposed by the licensee for the cutblock would overcome concerns about the amount of area that was clearcut or in a similar condition.

Finding #4

Watershed assessments indicated that cutting permit 143 could be accessed and harvested with low risk of impacts to water quality.

[1] Trees were being retained in the 30-metre riparian management zones adjacent to the two non-fish streams in the block. Here, riparian management zones are the areas adjacent to a stream, of a width determined in accordance with the regulations.

Cutblock Size

Cutting permit 143 was proposed to be 125 hectares in size. Section 22(b)(ii)[2] of the *Operational Planning Regulation,* in effect at the time, allowed the district manager to approve blocks larger than 40 hectares[3] if 40 percent of the stand[4] was to be retained. That was the case for cutting permit 143. This is also consistent with the *Community Watershed Guidebook.*

Finding #5

The block size was consistent with Code requirements under the *Operational Planning Regulation* and *Community Watershed Guidebook* recommendations.

The district manager told the Board that he was satisfied that he had the information necessary to make his determination on the silviculture prescription. The Board agrees that it was reasonable for the district manager to be satisfied that the plan adequately managed and conserved forest resources.

Finding #6

Approval of the silviculture prescription complied with the Code. The district manager considered the available information, including terrain stability assessments, watershed assessments and professional evaluations of those assessments. The assessments indicated no significant problems that might affect water quality. It was reasonable for the district manager to be satisfied that the plan would adequately manage and conserve forest resources.

The district manager required that the licensee meet with the complainant to discuss its concerns and notify the district manager as to how the complainant's concerns had been addressed. In February 1997, the district manager wrote and informed the complainant about the advice he had received from the regional staff about the terrain and hydrology issues. He provided the complainant with copies of the terrain stability and watershed assessments. The licensee provided the draft silviculture prescription to the complainant for a 60-day review period. The complainant took advantage of the opportunity to comment. The licensee responded in detail to those comments. There were no substantive changes to the final silviculture prescription in response to the complainant's review comments. However, prior to submission of the silviculture prescription, cutting permit 143 underwent an overall assessment process that was more extensive than required by the Code for areas that are not community watersheds. The Board considers the process to have been both reasonable and fair in the circumstances.

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[2] Section 11(3)(b) of the current *Operational Planning Regulation*.

[3] This is the general limit set in section 11(1)(a) for this area.

[4] More specifically, 40 percent of the pre-harvest basal area. The basal area is the sum of the cross-sectional area of each tree in the stand.

Finding #7

The approval process for the silviculture prescription was fair and reasonable. The district manager communicated with the complainant and enabled the complainant to review the technical assessments and the silviculture prescription.

2. Location of Visual Impact Viewpoints

> ***Visual quality objectives*** *are resource management objectives, established by the district manager or contained in a higher-level plan, that reflect the desired level of visual quality, based on physical characteristics and social concerns for the area.*

The complainant was concerned about how a visual impact assessment was done for cutting permit 143.

Visual quality is a forest resource. A visual resource management program was established to address visual landscape issues along significant travel corridors used by the general public. The program was not intended to address the concerns of individual property owners. Section 1 of the *Operational Planning Regulation* allows the district manager to identify scenic areas and, after developing a visual inventory, to establish visual quality objectives. A visual impact assessment can follow but is only required if the district manager has established a visual quality objective for an area.

> ***Scenic areas*** *are visually sensitive areas or scenic landscapes identified through a visual landscape inventory or planning process carried out or approved by the district manager.*

A visual impact assessment simulates the visual impacts of proposed timber harvesting and road operations on the scenic landscape and assesses whether or not visual quality objectives will be achieved. For both a visual inventory and a visual impact assessment, various viewpoints are selected from which the areas of proposed operations can be observed. Viewpoint locations reflect travel patterns of an average forest visitor or traveler.

A visual inventory for Gun Lake was completed in 1993. The inventory resulted in a recommendation of 'retention.'[5] However, after considering other values, the district manager set the visual quality objective at 'partial retention'[6] for the Gun Lake area.

Results of the visual inventory were provided to the complainant in September 1996. The regional and district landscape specialists also met with the complainant at that time. In April 1997, the complainant learned of the locations for the viewpoints used in the inventory. The complainant wanted the viewpoints to be moved farther upslope, to the back of its properties. District staff refused because such viewpoint selection would not be consistent with the provincial methodology.[7]

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[5] Logging activities are not visually evident.

[6] Logging activities are visible but remain subordinate.

[7] Some guidance for methodology is provided in the *Visual Impact Assessment Guidebook*.

After completing the visual inventory and setting a visual quality objective for Gun Lake, the district manager required that a visual impact assessment be conducted for cutting permit 143. Guidance for conducting the assessment is found in the *Visual Impact Assessment Guidebook*. There are no regulations specifying how the assessment should be carried out. The results of the assessment were referred to the complainant for a 60-day review period in August 1997, and the complainant provided comments in October 1997. The complainant commented that the assessment of cutting permit 143 did not adequately represent the visual impact on properties around Gun Lake. The complainant again maintained that the viewpoints should have been located at higher elevations at the back of the properties. The district manager refused to require that the viewpoints be moved.

Finding #8

The district manager did not require that the licensee move the visual impact assessment viewpoints. There are no regulations specifying how the assessment should be completed. The location of the viewpoints complied with the Code.

The *Visual Impact Assessment Guidebook* was followed in conducting the assessment.

The complainant was provided an opportunity to discuss the visual impact assessment. The district manager also required that a committee, including representatives for the complainant, be established to monitor the visual impact of the block as harvesting proceeded. The Board considers this process to have been fair.

Finding #9

The visual management process was fair. The district manager consulted with the complainant prior to accepting the visual impact assessment and then established a committee to address visual problems that might arise during harvesting.

The viewpoints were located along the main travel route around Gun Lake. This is consistent with the direction given in the *Visual Impact Assessment Guidebook*. The concerns of the complainant were understandable because the harvesting could impact their quality of life and property values. However, even though the district manager did have the discretionary authority to move the viewpoints, it was reasonable for him to decide not to move them to places where the public had no access.

Finding #10

The district manager's decision not to move the visual impact assessment viewpoints, as requested by the complainant, was reasonable. Locating viewpoints at the back of the residents' properties would not have been consistent with the visual resource management program objective to manage visual quality from areas used by the general public.

3. Request for Community Watershed Status

Nearly 500 watersheds in British Columbia are designated as community watersheds under the Code. Water resources receive greater protection in community watersheds than in non-community watersheds because the Code imposes stricter requirements for forestry and range activities in community watersheds. The Code measures to protect community watersheds are intended to prevent long-term change to background water quality, quantity and timing of flow.

Section 41(10) of the Act authorizes the Ministry of Forests regional manager to designate an area as a community watershed only if the designated environment official is in agreement.

The complainant requested community watershed status several times. The first request was to the Ministry of Environment, Lands and Parks in 1994. The complainant was advised then that criteria for considering requests for community watershed designation would not be available until the *Community Watershed Guidebook* was completed. A subsequent request went forward to the regional water manager of the Ministry of Environment, Lands and Parks in 1996.

Although not legally binding, the *Community Watershed Guidebook* lists criteria to assist decision-makers in determining if an area should be designated as a community watershed. According to the guidebook, watersheds can be evaluated on the following criteria:

- need for additional community water
- water supply alternatives
- land ownership and land use
- watershed drainage area
- natural suitability of the watershed to supply clean water

In watersheds where lakes are the water source, additional criteria relating to the size of the lake are considered. The guidebook indicates that, in general, the larger the lake, the greater the ability of the lake to withstand water quality impacts from surrounding land uses. Lakes that have a surface area larger than 500 hectares; a mean depth greater than five metres; a residence time[8] greater than two years; and a watershed to lake area ratio of less than 5:1 are considered to have natural buffering potential and, therefore, do not require the extra protection afforded by community watershed designation.

A November 29, 1996, internal staff memo to the water manager evaluated the Gun Lake watershed in terms of the *Community Watershed Guidebook* review criteria. The memo advised that, of the criteria from the guidebook, only the watershed to lake area ratio (7.4:1) supported the case for greater protection. The guidebook recommended no more than a 5:1 ratio. This indicates that, relative to the lake, the surrounding watershed area was greater than what the lake could easily buffer. However, it was felt that the lake size (535 hectares), mean depth (50 metres), and long residence time (25 years) provided a better indication that the lake had the

[8] The time it takes water to travel through a lake from the inlet point to the exit point.

ability to buffer water quality impacts. The memo advised that, based on an office technical review, Gun Lake did not warrant designation as a community watershed.

The water manager considered the criteria. However, when the water manager learned that the Ministry of Forests district manager had promised to treat the area as a community watershed, he stopped considering the application. He was not aware that the district manager's commitment only applied to cutting permit 143.

The process for consideration of the original request for community watershed status was consistent with the recommendations in the *Community Watershed Guidebook*. However, the application may not have received full consideration by the water manager because he was under the impression that the issue had been resolved by the district manager's commitment to treat the area as a community watershed.

Finding #11

The consideration of the request for community watershed status was done in compliance with the Code. While the process that the Ministry of Environment, Lands and Parks followed was largely fair, it may have been impaired by the influence that the district manager's commitment may have had on the water manager's decision.

As of June 2000, the Ministry of Environment, Lands and Parks water manager was considering a new application made by the complainant, following development of a formal application and revised standardized criteria for community watershed designation. This reconsideration eliminates the significance of the possible flaw in the earlier decision. The decision would have had no effect on the outcome of cutting permit 143 because the district manager was treating the proposal as if it were in a community watershed. The assessments required for proposals in community watersheds were, in fact, applied to the development of cutting permit 143.

Conclusions

Concern 1: The silviculture prescription was approved in compliance with the Code. The approval process was fair and reasonable. In response to the complainant's concerns, the district manager required a greater level of assessment of the proposal than was required by the Code. The complainant's concerns about the terrain stability assessments, watershed assessments and cutblock size were not supported by the investigation.

Concern 2: The process for locating the visual reference points was done in compliance with the Code. The district manager was not required to address the concerns of individual property owners with the visual impact assessment. The process was fair. The decision not to move the viewpoints, as requested by the complainant, was reasonable.

Concern 3: The process for considering the request for community watershed status was done in compliance with the Code. The process was largely fair but may have been impaired because the water manager misunderstood the district manager's commitment to treat the area as a

community watershed, and this may have affected his decision. However, any potential effect this had on the complainant's request was mitigated by the fact that the Ministry of Environment, Lands and Parks is reconsidering the request under a new application process.

Recommendations

In accordance with section 185 of the *Forest Practices Code of British Columbia Act*, the Board makes the recommendations set out below. In accordance with section 186 of the Act, the Board requests that parties notify it of steps taken in response to the recommendations, as set out below.

1. The Ministry of Forests should clarify if its commitment to treat the Mt. Zola area as a community watershed extends to the rest of the Gun Lake watershed.

2. A Watershed Advisory Committee should be formed, as recommended in the *Interior Watershed Assessment Procedure Guidebook* (1999), to review the existing watershed assessments and to determine if the assessments identify any hydrological issues that might be affected by other development in the watershed.

The Board requests that the Ministry of Forests advise the Forest Practices Board by October 31, 2000, as to how it will address Board recommendations 1 and 2 above.

Location of Gun Lake Complaint